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Le document se veut une continuation, au niveau de la huitième année, d'une recherche entreprise en 1974-1975 auprès d'élèves de septième année et visant à comparer les mérites respectifs de trois programmes de français langue seconde: le programme régulier F.S.L. (French second language), un programme d'immersion précoce (début du primaire) et un programme d'immersion en septième année. Il s'agit de comparer les habiletés en français et en anglais d'élèves qui ont commencé à suivre un programme d'immersion en 1968-1969, alors qu'ils étaient en première année, avec les résultats d'élèves inscrits dans des classes d'immersion de septième année en 1974-1975 et les résultats de groupes de contrôle anglophone et francophone.

Au total, 190 élèves de la région de Montréal ont pris part à l'enquête: 35 élèves du programme d'immersion précoce, 87 du programme d'immersion de septième année, 36 du groupe de contrôle anglophone et 32 du groupe de contrôle francophone. Les tests suivants ont été administrés au cours de l'année scolaire 1975-1976: trois sections du "California achievement test", les Tests de rendement en français et en mathématiques de la CECM, enfin des tests de lecture cloze, d'écoute et de production orale en français ainsi qu'une dictée.

Alors qu'aucune différence significative n'apparaît au niveau de la maîtrise de l'anglais, les élèves des classes d'immersion précoce obtiennent des résultats en français supérieurs à ceux des classes d'immersion de septième année, particulièrement au niveau grammatical, toutes les classes d'immersion étant avantagées de ce point de vue par rapport au groupe de contrôle anglophone. Il semble que les élèves des classes d'immersion aient acquis une connaissance fonctionnelle du français; ils manifestent toutefois d'importantes faiblesses au niveau des structures grammaticales et sémantiques de cette langue.

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A COMPARISON OF THE PILOT EARLY IMMERSION, GRADE 7 IMMERSION AND E.S.L. PROGRAMS AT THE GRADE 8 LEVEL

A REPORT SUBMITTED BY THE INSTRUCTIONAL SERVICES DEPARTMENT

TO

THE PROTESTANT SCHOOL BOARD OF GREATER MONTREAL

MARCH 1977

ACKNOWLEDGEMENTS

We would like to express our appreciation to the principals, Heads of French Departments, teachers and students who participated in this project for their generous cooperation, and to Biba Stefanovic for her assistance in carrying out this research.

We would also like to thank la Commission des Ecoles Catholiques de Montréal for permission to use their Tests de Rendement, and Dr. E.G. Cochrane, Director of Instructional Services, The Protestant School Board of Greater Montreal, for his helpful comments on a draft of this report.

A comparison of the pilot early immersion, grade7 immersion and F.S.L. Programs at the grade 8 level.

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PREFACE

The research presented in this report includes part of the data collected by Mme S. Troué in partial fulfillment of the requirements for a doctoral degree in the Faculté d'Education Comparé, Université de Montréal. The current report was prepared for The Protestant School Board of Greater Montreal by Dr. F. Genesee, Research Officer, Instructional Services, with the permission of Mme Troué and does not necessarily reflect the views or opinions of Mme Troué or the complete extent of the research to be used in her doctoral dissertation.

The current report describes the extension of our evaluation of the pilot Early Immersion Group which originated at Roslyn School in 1968. These same students were the subject of a comparative evaluation of the Early Immersion, Grade 7 Immersion and French-as-a-second-language (F.S.L.) programs carried out during 1974-75 when the students were in Grade 7 (see Genesee and Chaplin, 1975, for the complete report). In that report, among others, the following preliminary conclusions were made concerning the French language skills of the student groups under investigation:

"The Early Immersion group scored higher than the Wing group on some of the French language tests: Test de Lecture (vocabulaire), the Tests de Rendement (en Français, en Mathématiques), compréhension auditive and grammaire.

There was a significant difference between the Early Immersion group and the Grade 7 Immersion Centre group on the Test de Rendement en Français, in favor of the Early Immersion Group. There were no significant differences between these two groups on the other French language tests.

The French Control group scored consistently higher than the Wing group on all French tests. The French Control group scored higher than the Early Immersion and Centre group on the oral production measures; there were no differences between the French Control group and the Centre and Early Immersion groups on the Test de Lecture, the Tests de Rendement or on the tests of compréhension auditive." (Page 32)

Thus, surprisingly, the pilot Early Immersion group did not demonstrate a consistent advantage over the Grade 7 Immersion group, at least the Centre group. A follow-up evaluation of Grade 7 students in the same programs during 1975-76 found that "there were significant differences between the follow-up Early Immersion Group and the Grade 7 Immersion Groups (Wing and Centre) on all French language tests." (See Genesee,1976,for the complete report.) It was noted in that report that a similar discrepancy between a pilot Early Immersion group and a follow-up Early Immersion group had been reported in schools of the South Shore Regional Protestant School Board (Bruck, Lambert and Tucker,1974; Bruck, Lambert and Tucker,1976).

The current research is a continuation of our 1974-75 evaluation at the Grade 8 level. Therefore, the students in the Early Immersion group of the current research represent the pilot group from Roslyn School while the Grade 7 Immersion groups represent the fifth generation of students to enter the Grade 7 Immersion Program. We were particularly interested in the relative performance of the students on tests of French language competence.

THE SAMPLE

Five groups of students participated in this evaluation:

(1) Early Immersion Group - This group consists of students who had participated in the Early Immersion Program since Grade 1, 1968-69. These students, in fact, represent the pilot Early Immersion group which entered the program at Roslyn School in September 1968.

(2) Grade 7 Immersion Centre Group - This group consists of students who had been in the one-year Grade 7 Immersion Program in the preceding year, 1974-75. These students had attended one of the PSBGM Grade 7 French Immersion Centre schools, specifically, Royal Vale or Elmgrove.

(3) Grade 7 Immersion Wing Group - This group consists of students who had been in the one-year Grade 7 Immersion Program, located in a school which otherwise offered a regular English program.

(4) English Control - This group consists of students who had always been in the Regular English Program with F.S.L. (French-as-a-second-language).

(5) French Control - This group consists of students in Grade 8 at Ecole Secondaire de Roberval, a French language secondary school in the PSBGM. All students in this group were native French-speaking.

Owing to work disruptions in the schools during 1975-76, student participation in the evaluation was much lower than originally planned and was also quite irregular, that is to say, the same students did not participate in all test sessions. Table 1 summarizes the actual sample sizes for each test that was administered and the schools from which the students were selected. The students in all groups were selected from either the above average group (full scale Lorge-Thorndike Intelligence test score above 115) or the average group (full-scale I.Q. between 96 and 115). It was not possible to include the results of below average students in this report owing to the poor participation of this group. As well, since the Early Immersion Group did not include below average students, deletion of this sub-group from the other school groups allowed us to balance the research design.

THE TEST BATTERY

A) English Language Tests

The following tests were taken from the California Achievement Tests (1971), Level 4, Form A. These are timed, group-administered tests which assess a variety of scholastic skills. Raw scores were analyzed statistically.

(1) Reading Comprehension

This test consists of "two reference skill problems and four reading passages which typify material found in students' science, social studies, mathematics and general reading texts. The students' comprehension is measured through 45 multiple-choice items which test relationships, inferences, recall of facts, and identification of main ideas."

(2) Vocabulary

This test is composed of "40 items each consisting of a stem word in context and a list of four alternative words. The student's task is to choose the alternative that has the best meaning for the stem word."

(3) Spelling

This test "contains 32 multiple-choice items. The student is asked to determine which word, if any, out of a group of four words is misspelled.

Common spelling errors, such as ie - ei reversals, silent letters, omissions and vowel substitutions, are tested."

B) French Language Tests

(4) Test de Rendement en Français (Secondaire 2)

This test was developed and standardized by La Commission des Ecoles Catholiques de Montréal for testing of Grade 8 students in its French schools, 1972-73. It consists of 35 multiple-choice items which assess a variety of language skills, including vocabulary, spelling and comprehension of sentences and text. Raw scores were converted to stanine equivalents for statistical analysis.

(5) Test de Rendment en Mathématiques (Secondaire 2)

This test was also developed and standardized by La Commission des Ecoles Catholiques de Montréal for testing Grade 8 students in its French schools during 1972-73. It consists of 30 multiple-choice items assessing mathematical skills taught in the Grade 8 mathematics program of the C.E.C.M. Raw scores were converted to stanine equivalents for statistical analysis.

(6) Test de Lecture Cloze

This test consists of a prose passage entitled "Mireille Mathieu: Un Mignon Petit Bout de Femme". There are five paragraphs in this passage. Every sixth word in paragraphs 2 to 5 inclusive had been deleted. There are 25 deletions in total. The students were asked to read the passage and to

supply the missing words so that they would correspond to what the student thought were the original words. See Appendix A for a copy of this test.

The tests were later scored according to five response categories: (1) omission, (2) exact replacement, (3) synonym, (4) non-sense, or (5) grammatical error. To be scored as an exact replacement the word supplied by the student had to be identical to the original. The synonym category included words which were not identical to the originals but, nevertheless, were of the same grammatical category as the original and had the same or nearly the same meaning as the original. Non-sense responses included words which were of the same grammatical category as the original but did not fit into the meaning of the story. Grammatical errors included words which did not belong to the same grammatical category as the original and, therefore, could not fit into the meaning of the story.

(7) Dictée

The students listened to a passage, presented by means of a tape recorder, and wrote exactly what they heard. The passage consisted of four sentences:

> "Pierre et ses amis ont décidé de former un cercle français. Ce matin, il va se présenter devant son comité. Il a pris une bonne douche et a mis sa cravate préférée. Il tient beaucoup a être à l'heure à cette première réunion pour donner le bon exemple."

An error analysis of the students' scripts was carried out subsequently using six error categories: (1) omission, (2) faute d'orthographe d'usage, (3) faute d'orthographe grammaticale, (4) accent, (5) transfer, and (6) comprehension.

Faute d'orthographe d'usage includes spelling errors in the invariant part of the word or in invariant words (e.g., "il dunne" for il donne; "la mayson" for la maison).

Faute d'orthographe grammaticale includes spelling errors related to the grammatical inflection of words (e.g. "la maison blanch_"; "il donnes"). Errors of accent include the omission of any required accent marking (e.g., "francais") and the use or addition of incorrect accent markings (e.g., "mathèmatiques"). Words which require more than one accent can have more than one accent error (e.g., "préférée").

Transfer errors include orthographic errors which derive from English (e.g., "idea" for idée; "committee" for comité; "examples" for exemple).

Comprehension errors include errors of a substitution type where the incorrect item was phonetically similar to the correct item (e.g., "un siècle français" for un cercle français). There were very few of this latter type of error. Omissions, of course, simply include words which were not transcribed.

(8) Test d'Ecoute

The students were required to answer 16 multiple-choice questions based on a passage entitled "Pierrot et le Cambrioleur". There were four alternative answers to each question with the fourth one always being "Aucune". The passage was read twice, once in its entirety without questions, and a second time with questions following the relevant sections. The text was read by a male voice and the questions were read by a female voice.This test was presented by means of a reel-to-reel tape recorder to standardize administration.

(9) Production Orale

A sub-sample of students from each school group were interviewed individually by one of two native French-speaking people. The interview was initiated by having the students describe a cartoon picture. Subsequently, the students were engaged in a short five-minute conversation on matters of interest to them. The interviewers were "blind" as to the school group of each student. All interviews were tape recorded for later analysis.

Each interview was subsequently evaluated by two native French-speaking raters independently along four dimensions: (1) elocution, (2) prononciation, (3) grammaire et syntaxe, and (4) vocabulaire. Evaluations were made on a 5-point rating scale ranging from 5, indicating excellent, to 1, indicating very poor (see Appendix B for a sample of the rating scales). The raters were not "blind" as to the school group and I.Q.group

of each student. In fact, the raters listened to and rated the speech samples in blocks so that, for example, they heard all the Early Immersion students in a sequence followed by another school group. This procedure may have produced biased ratings due, in part, to the raters' knowledge of the students' group membership and, in part, to the speech samples being blocked. Therefore, interpretation of the results of these ratings is subject to these qualifications. The ratings from both raters were averaged to yield a single score per student per dimension.

A content analysis of the interviews was subsequently carried out by the same evaluators who had done the linguistic evaluation. A count was made of the number of ideas expressed by each student for each of the 12 episodes in the cartoon sequence. (See Appendix C for a copy of the cartoon that was used.) An idea was defined as a separate piece of information pertinent to the episode. In the following example the student was given credit for three ideas for the first episode; each idea is enclosed by parentheses ("Comme chaque jour Ferdinand se lève), (il va dans la salle de bain) (et il se rase").

The total number of ideas expressed by each student for all 12 frames combined was calculated.

RESULTS

(A) English Language Tests

Separate analyses of covariance (least squares solution) were carried out on the scores for the following tests: Vocabulary, Comprehension and Spelling. The main variable was school group (Early Immersion, Grade 7 Centre, Grade 7 Wing and English Control); I.Q. was the covariate. See Appendix D for a brief explanation of analysis of covariance. Use of this statistical procedure precludes differentiating between above average I.Q. and average I.Q. students. A summary of these analyses is presented in Table 2A.

There were statistically significant differences among the school groups on the Vocabulary subtest. The Centre Group ($\overline{X}$ = 30.41) and the English Control group ($\overline{X}$ = 30.97) scored at the same level as one another but significantly lower than the Early Immersion group ($\overline{X}$ = 34.27) and the Wing group ($\overline{X}$ = 34.09); the latter two groups scored at the same level as one another.

There was a significant difference between the Centre group ($\overline{X}$ = 31.61) and the Wing group ($\overline{X}$ = 35.18) on the Comprehension subtest; otherwise, there were no other significant differences on this subtest.

There were no significant differences between the groups on the Spelling subtest.

(B) French Language Tests

As in the case of the English language tests, separate analyses of covariance (least squares solution) were carried out on the scores for the following tests and their respective subtests: Test de Rendement en Français, Test de Rendement en Mathématiques, Test de Lecture Cloze, La Dictée, Test d'Ecoute, and Production Orale. The main variable was school group [Early Immersion, Grade 7 Centre, Grade 7 Wing, English Control (when included) and French Control (when included)]. A summary of these analyses is presented in Table 2B. For a detailed breakdown of group differences on the French tests see Appendix E.

Test de Rendement en Français

There were significant differences on the Test de Rendement en Français. Each group differed significantly from every other group with two exceptions. There was no difference between the Centre group ($\overline{X}$ = 4.02) and the English Control group ($\overline{X}$ = 3.43) or between the Wing group ($\overline{X}$ = 5.52) and the French Control group ($\overline{X}$ = 6.02). To summarize these results: (1) the French Control group scored significantly higher than all of the anglophone groups, except the Wing group; (2) the Early Immersion group scored higher than the Centre group and the English Control group, but lower than the Wing group; and (3) the Wing group scored higher than the Centre group and the English Control group. In terms of test norms, the English Control group scored in the "below average" stanine range (2-3), while all the other groups scored in the "average" stanine range (4-5-6).

Test de Rendement en Mathématiques

There were significant differences on the Test de Rendement en Mathématiques. The Wing group ($\overline{X}$ = 4.74) scored significantly lower than the Early Immersion group ($\overline{X}$ = 5.60) and the Centre group ($\overline{X}$ = 5.94), and the English Control group ($\overline{X}$ = 5.10) scored lower than the Centre group. There were no differences between the Early Immersion and Centre group or between the French Control group and any of the anglophone groups. In terms of test norms, all groups scored in the average stanine range.

Test de Lecture Cloze

There were significant differences among the groups on all scales of this test except on the omission category. (For a detailed breakdown of specific between-group differences see Appendix E.) Even though there was not a statistically significant main effect for the omissions category, there was a tendency for the French Control group ($\overline{X}$ = .61) to omit the fewest words, and for the Wing ($\overline{X}$ = 3.48) and English Control groups ($\overline{X}$ = 3.93) to omit the highest number of words; the Early Immersion ($\overline{X}$ = 2.06) and Centre group ($\overline{X}$ = 2.16) were intermediate to the other groups.

The Early Immersion ($\overline{X}$ = 14.17) and the French Control groups ($\overline{X}$=15.57) supplied the highest number of exact replacements; both of these groups supplied significantly more exact replacements than did any of the other three groups (Centre = 10.38; Wing = 8.68; English Control = 8.24). Among these three latter groups, the Centre students supplied significantly more exact replacements than did the Wing or English Control groups. There was no difference in the number of replacements supplied by the Early Immersion and French Control groups, or by the Wing and English Control groups.

If the students did not fill in the deletions with exact replacements, they could still fill in the deletions meaningfully by substituting a synonym for the original word, e.g., elle a passé une enfance difficile (instead of "pauvre"). It is interesting to note that the four anglophone groups [Early Immersion ($\overline{X}$ = 3.18), Grade 7 Centre ($\overline{X}$ = 2.33), Grade 7 Wing ($\overline{X}$ = 2.15), and English Control ($\overline{X}$ = 2.29)] did not differ in their use of this type of response whereas the French Control group ($\overline{X}$ = 4.88) supplied significantly more synonyms than did the other groups. This finding indicates that the native French-speaking students have a facility with the semantic aspects of French words that is difficult for a second language speaker to acquire, even in an intensive French language school program such as Early Immersion.

The four anglophone groups did not differ in their use of non-sense responses (Early Immersion = 2.25; Centre = 3.36; Wing = 2.79; English

Control = 3.41). All, however, supplied significantly more non-sense words than did the French Control group ($\bar{X}$ = .79), again indicating a level of linguistic skill which none of the anglophone groups had achieved.

Furthermore, the French Control group ($\bar{X}$ = 2.69) supplied significantly fewer responses that were grammatically unacceptable in the sentence frame than did the four anglophone groups. Interestingly, however, the Early Immersion group ($\bar{X}$ = 5.00), while supplying more grammatically unacceptable responses than the French Control group, supplied significantly fewer grammatically unacceptable responses than the other anglophone groups (Centre = 7.07; Wing = 8.39; English Control = 8.35); there were no significant differences among these latter three groups.

In summary, these findings suggest that the students who have followed the Early Immersion program are better able to supply the exact word in a cloze test and are less likely to provide a grammatically unacceptable substitute than students who have been following the Grade 7 Immersion program or the regular F.S.L. program. The Early Immersion students did not differ from the other anglophone groups in their use of synonyms or non-sense substitutions. Interestingly, the Grade 7 Immersion students did not differ from the English Control students on any of the response types.

Dictée

There were no significant differences between the groups in terms of the number of grammatical units which were omitted; units are defined here to include phrase structures, such as the subject of the sentence, the verbs, the object., e.g., "Pierre et ses amis / ont décidé / de former / un cercle français./" This sentence contains four units.

There were significant differences between the groups on all of the other error types: orthographe d'usage, orthographe grammaticale, accent, transfer and comprehension. For a detailed summary of the significant differences between the groups, see Appendix E.

Comparison between the English Control Group and the French Control Group: the English Control Group made significantly more errors of every type than did the French Control Group.

Comparison between Immersion Groups (Early, Centre and Wing) and the French Control Group: all three Immersion groups made significantly more errors of the following types than the French Control group: orthographe grammaticale, accent and transfer . There were no differences between the Immersion groups and the French Control group on the two remaining categories of orthographe d'usage and comprehension. Thus, as one might expect, the Immersion students were having most difficulty with the morphological aspects of written French (i.e., grammatical inflection of words).

Comparison between the English Control Group and the Immersion Groups: the English Control Group made more errors of the orthographe d'usage and grammaticale types than did the Immersion groups. There were no differences between them in terms of accent, transfer or comprehension.

Comparison among the Immersion Group : there were no differences among the Immersion Groups except on the category of orthographe grammaticale ; in this case, the Wing Group made more errors than the Centre or Early Immersion Groups, and there was no difference between the latter two groups.

In summary, we find that as the students' exposure to the French language increases, their control over the grammatical aspects of its written form increases. Moreover, the relative frequency of error types was the same for all anglophone student groups, regardless of French program with "fautes d'orthographe grammaticale" being the most prevalent followed in descending order by accent errors, errors of transfer from English to French, comprehension errors and finally "erreur d'orthographe d'usage." Interestingly, the French Control students, although making significantly fewer "erreurs d'orthographe grammaticales" than the anglophone students, still made a considerably large number of this type of error relative to the other types. The relative frequency of occurrence of the other error types was so small for this group as to make it meaningless to rank order them.

Test d'Ecoute

There were significant differences among the school groups on the Test d'Ecoute: the French Control group ($\bar{X}$ = 14.08) scored significantly higher than all three anglophone groups which took this test (Early Immersion = 10.77; Centre = 10.15; Wing = 9.95). There were no significant differences between any of the anglophone groups.

Production Orale

Separate analyses of variance (least squares solution) were performed on the following scores: élocution, prononciation, grammaire, vocabulaire and total number of "idées" expressed for all 12 frames of the cartoon. The main variables were school group (Early Immersion, Centre, Wing) and I.Q. level (above average, average). Disruption in the English and French schools which had been selected as control schools prevented inclusion of these groups of students. A summary of these results is presented in Table 2B.

There were significant differences between the school groups on the four linguistic measures of élocution, prononciation, grammaire and vocabulaire. In the cases of élocution, grammaire and vocabulaire, the Early Immersion students were rated higher than the students from the Grade 7 Centre and Wing programs. In the case of prononciation, the Centre group ($\bar{X}$ = 3.55) scored significantly lower than the Wing group ($\bar{X}$ = 3.93) and the Early Immersion group ($\bar{X}$ = 4.03). The results for number of "idées" were marginally significant ($p = .07$) with the Early Immersion students ($\bar{X}$ = 13.05) and the Grade 7 Wing students ($\bar{X}$ = 13.97) expressing more ideas in total than the Grade 7 Centre students ($\bar{X}$ = 11.53).

There were statistically significant differences between the above average and average I.Q. groups on the measures of élocution (above = 3.39; average = 2.84), prononciation (above = 3.99; average = 3.68) and grammaire (above = 3.28; average 2.820; there were no significant differences between the I.Q. groupings on the measures of vocabulaire (above = 3.05; average = 2.75) and idées (above = 13.57; average = 12.13). Thus, in those cases where there were differences, the above average students were rated higher than the average students. It would appear that the average students' somewhat poorer linguistic skills, as measured by élocution, prononciation and grammaire, did not interfere with their expressive skills. As was pointed out in the Test Battery section, interpreters of these results must bear in mind that the speech samples were rated using a non-blind, blocked procedure which may have yielded results biased in favour of the Early Immersion and above average students.

SUMMARY AND DISCUSSION

As has been found in earlier evaluations of the Immersion programs, there were no indications in the current one that the English language skills of the Immersion students, Early or Grade 7, were poorer than those of students in the regular program. On the contrary, there was some evidence that certain of the Immersion groups, Early Immersion and Ming in particular, were superior in English language skills (reading comprehension and vocabulary) to the regular program students.

Results from the French language testing revealed the following patterns:

(1) In general, the English Control group scored lower than the French Control group and the other anglophone groups (Early Immersion, Centre and Wing); this was true for the Test de Rendement en Français, the Test de Lecture Cloze and La Dictée. The English Control group scored as well as the other groups on the Test de Rendement en Mathématiques.

(2) The Early Immersion group scored higher than the Centre and Wing Immersion groups on the following tests: Test de Rendement en Français, the Test de Lecture Cloze, and on three of four scales of the production orale test. There were no significant differences between the Early Immersion group and the Centre and Wing Immersion groups on the Test de Rendement en Mathématiques, La Dictée and le Test d'Ecoute.

(3) There were no appreciable differences between the Centre Immersion students and the Wing Immersion students on any of the measures, with the following exceptions: the Centre students scored higher than the Wing students on the Test de Rendement en Mathématiques and on the Test de Lecture Cloze while the Wing students scored higher than the Centre students on the Test de Rendement en Français and on the prononciation scale of the oral production test.

(4) The French Control group scored higher than the two one-year Grade 7 Immersion groups on virtually every French test that was administered to these groups, two exceptions being the Test de Rendem nt en Mathématiques and the categories of "erreurs d'orthographe d'usage" and compréhension of La Dictée. The same was true of the Early Immersion group with the added exceptions of the Test de Lecture (exact replacement category), and La Dictée ("erreur d'orthographe grammaticale" category).

A number of results deserve further discussion. In our previous evaluation of the pilot Early Immersion students (see Genesee & Chaplin, 1975), we found that they were superior to students in the one-year Grade 7 Immersion program only on the Test de Rendement en Français. In the current evaluation, however, the pilot Early Immersion students demonstrated superior skill in French on the Test de Rendement en Français, on a reading test (Test de Lecture Cloze) and on measures of oral production. This suggests that a comparative evaluation of the Early Immersion and Grade 7 Immersion programs at the end of Grade 7 may give an advantage to the Grade 7 Immersion students owing to the extensive nature of their Grade 7 French program (85% French) relative to that of the Grade 7 year of the Early Immersion program (40% French). Evaluation of these programs beyond the Grade 7 level may yield a more balanced and, therefore, more stable index of their relative impacts on the participating students. If this is the case, it would be important to assess the skills of students in these two programs at the end of secondary school in order to determine their final long term achievements in French.

More detailed insights into the nature of the Immersion students' French language skills emerge from some of the tests. It appears from the analyses of the Test de Lecture that, although the Early Immersion students were better able than the Grade 7 Immersion students to supply the exact replacement for words deleted from a text, the former were no more skilled than the latter in supplying synonyms as substitutes or in avoiding non-sense fill-ins, suggesting that all of the Immersion students were either quite sure or quite unsure of the meaning of what they were reading. At the same time, the Early Immersion group exhibited a greater knowledge of the grammatical constraints of French in that they were better able than the Grade 7 Immersion groups to avoid the use of grammatically unacceptable fill-ins (e.g., they were less likely to supply a verb when a noun was demanded by the syntax of the sentence).

The Early Immersion group also demonstrated a greater knowledge of French grammar rules in La Dictée insofar as they made fewer "erreurs d'orthographe grammaticales" than did the Grade 7 Immersion groups. In other aspects of this test ("erreurs d'orthographe d'usage", accent, transfer and errors of comprehension), however, all three Immersion groups performed similarly, and significantly poorer than native French-speaking students.

Finally, it is worth noting that the Wing and Centre students were as orally communicative, i.e., they expressed as many ideas, as the Early Immersion students despite a relative weakness in the more phonological

and rule-governed aspects of the language (e.g. élocution, prononciation, grammaire, vocabulaire).

In summary, the results of the current evaluation indicate that the Early Immersion students demonstrated greater competence in French language arts, reading and oral production. Moreover, the Early Immersion students exhibited a greater understanding of the grammatical constraints of French than did the Grade 7 Immersion groups. The performance of the Grade 7 Immersion group was most comparable to that of the Early Immersion group on tests which involved listening skills (i.e., La Dictée and Le Test d'Ecoute). It also appears that the Grade 7 Immersion students were as orally communicative as the Early Immersion students despite a somewhat poorer command of the phonology, vocabulary and grammar of the language. Finally, all three Immersion groups performed below the level of the native French-speaking control students on most of the tests and sub-tests.

In conclusion, the picture that emerges from these data is one of students who have acquired a functional competence in French, as indicated by their performance on standardized tests of French language arts and mathematics and on tests of oral production and listening comprehension skills, but who lack an understanding and command of the deeper grammatical and semantic features of the language. We will continue to monitor the progress of these students as they advance through secondary school.

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APPENDIX A

MIREILLE MATHIEU

UN MIGNON PETIT BOUT DE FEMME

Mireille Mathieu est une chanteuse très populaire en France. Elle a fait des tournées dans beaucoup de pays, surtout aux États-Unis et au Canada. Vous avez peut-être eu l'occasion de voir cette petite femme et d'entendre sa belle voix claire à la télévision ou à la radio. Elle est passée dans le spectacle de Flip Wilson, de Johnny Cash, d'Andy Williams, de Danny Kaye et dans beaucoup d'autres.

Elle est née en Avignon, près _____ Marseille, le 22 juillet 1947. Elle _____ l'aînée de 14 enfants; elle a _____ la seconde mère de ses frères _____ soeurs. Elle a passé une enfance _____ et dès quatorze ans elle a _____ à travailler dans une usine.

Lorsqu'on _____ demande si elle espère avoir des _____, elle répond en souriant qu'elle aime _____ les enfants mais qu'elle n'en voudrait qu'un _____ deux.

C'est son courage et _____ ténacité qui lui ont permis de _____ une grande vedette de la chanson _____. Elle rêvait depuis longtemps de chanter _____ public et grâce à ses économies _____ a pu suivre des cours de _____.

Elle possédait chez elle toute la _____ d'Edith Piaf, la légendaire chanteuse française, _____ il y a quelques années. Mireille Mathieu _____ tendance à imiter la grande Piaf _____ aujourd'hui elle est arrivée a acquérir _____ style bien personnel. Elle ne s'arrête _____ de perfectionner ses grandes qualités de _____: elle a un professeur de danse, _____ diction, de culture physique et même _____ conversation anglaise.

APPENDIX B

1. Elocution

- Parle couramment 5
- Cherche occasionnellement ses mots 4
- Hésitant, mais parvient à communiquer 3
- Manque de mots, a besoin d'être aidé 2
- Pénible, ne peut s'exprimer convenablement 1

2. Prononciation

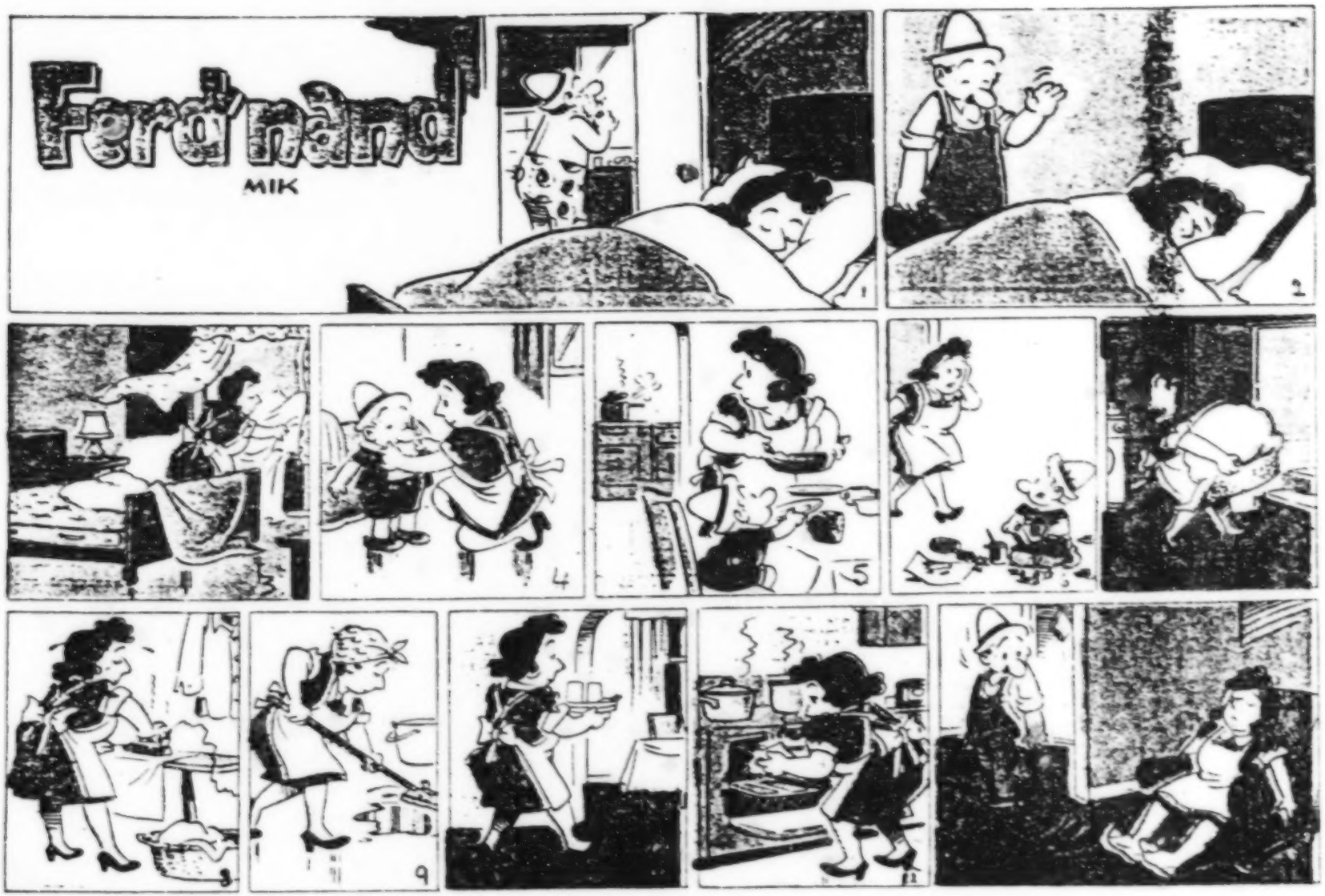
- Prononce comme si c'était sa langue maternelle 5
- Quelques mots sont mal prononcés, mais la communication ne s'en trouve pas affectée 4
- Prononciation menant à des contresens 3
- Graves défauts, la communication s'en trouve très affectée 2
- Presqu'incompréhensible 1

3. Grammaire et syntaxe

- Pas d'erreur 5
- Erreurs occasionnelles 4
- De nombreuses erreurs mais la communication n'est pas affectée 3
- Grammaire et syntaxe très insuffisantes, communication souvent affectée 2
- Les erreurs rendent le langage incompréhensible 1

4. Vocabulaire

- Equivalent à un francophone du même âge 5
- Vocabulaire simple, mais suffisant à la communication 4
- Anglicismes occasionnels, n'affectant pas la communication 3
- Emploie des mots en anglais ou en demande la traduction 2
- Insuffisant à la communication 1


Ferdinand
MIK
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9

APPENDIX D

EXPLANATION OF ANALYSIS OF COVARIANCE

Analysis of covariance is a statistical procedure which is similar to the analysis of variance in that it is used to compare the results of two or more groups on a particular test. At the same time, analysis of covariance mathematically reduces the influence that another variable, such as I.Q., might have on the test results. For example, if two hypothetical language groups under investigation differ a priori in terms of I.Q., and if it is believed that I.Q. will significantly influence performance on the test being administered (e.g., a reading test), then an analysis of covariance will estimate the significance of the language factor, eliminating mathematically the influence of the I.Q. factor. This mathematical procedure is used where it is difficult or impossible to select groups which are equivalent in I.Q.

APPENDIX E

SUMMARY OF NEWMAN-KEULS MULTIPLE COMPARISON TESTING [1.]

- FRENCH LANGUAGE TESTS -

1) TEST DE RENDEMENT EN FRANCAIS

Early Immersion	Grade 7 Centre	Grade 7 Wing	English Control	French Control
4.82	4.02	5.52	3.43	6.02

2) TEST DE RENDEMENT EN MATHEMATIQUES

Early Immersion	Grade 7 Centre	Grade 7 Wing	English Control	French Control
5.60	5.94	4.74	5.10	5.25

3) TEST DE LECTURE CLOZE

a) EXACT REPLACEMENT

Early Immersion	Grade 7 Centre	Grade 7 Wing	English Control	French Control
14.17	10.38	8.68	8.24	15.57

b) SYNONYM SUBSTITUTION

Early Immersion	Grade 7 Centre	Grade 7 Wing	English Control	French Control
3.18	2.33	2.15	2.29	4.88

1. Mean scores joined by a line differ significantly from one another according to the Newman-Keuls Test of Multiple Comparison procedure.

Test de Lecture (cont'd)

c) NON-SENSE

Early Immersion	Grade 7 Centre	Grade 7 Wing	English Control	French Control
2.25	3.36	2.29	3.41	.79

d) GRAMMATICAL

Early Immersion	Grade 7 Centre	Grade 7 Wing	English Control	French Control
5.00	7.07	8.39	8.35	2.69

4) LA DICTEE

a) ORTHOGRAPHE D'USAGE

Early Immersion	Grade 7 Centre	Grade 7 Wing	English Control	French Control
.85	.46	.54	2.02	.31

b) ORTHOGRAPHE GRAMMATICALE

Early Immersion	Grade 7 Centre	Grade 7 Wing	English Control	French Control
4.64	6.38	7.23	6.48	3.07

c) TRANSFER

Early Immersion	Grade 7 Centre	Grade 7 Wing	English Control	French Control
1.96	1.69	1.95	2.73	.23

La Dictée (cont'd)

d) ACCENT

Early Immersion	Grade 7 Centre	Grade 7 Wing	English Control	French Control
3.56	2.68	4.02	4.23	.46

e) COMPREHENSION

Early Immersion	Grade 7 Centre	Grade 7 Wing	English Control	French Control
.99	.98	1.02	1.80	.01

5) TEST D'ECOUTE

Early Immersion	Grade 7 Centre	Grade 7 Wing	NOT GIVEN	French Control
10.77	10.15	9.95		14.08

6) ORAL PRODUCTION

a) ELOCUTION

Early Immersion	Grade 7 Centre	Grade 7 Wing
3.55	2.83	2.96

b) PRONONCIATION

Early Immersion	Grade 7 Centre	Grade 7 Wing
4.03	3.55	3.93

Oral Production (cont'd)

c) GRAMMAIRE

Early Immersion	Grade 7 Centre	Grade 7 Wing
3.38	2.76	3.00

d) VOCABULAIRE

Early Immersion	Grade 7 Centre	Grade 7 Wing
3.38	2.66	2.67

TABLE 1

SAMPLE SIZES

	TEST	Early Immersion	Grade 7 Centre	Grade 7 Wing	English Control	French Control
(1,2,3)	California Achievement Tests	35	38	46	36	-
(4,5)	Tests de Rendement	33	40	45	35	32
(6)	Test de Lecture Cloze	34	41	46	25	29
(7)	Dictée	31	37	43	27	29
(8)	Test d'Ecoute	33	32	32	-	29
(9)	Production Orale	20	21	25	NOT ADMINISTERED	
	SCHOOLS:	Westmount	West Hill Westmount	Dorval Lachine	Dorval Lachine West Hill Westmount	de Roberval

TABLE 2

SUMMARY OF ENGLISH AND FRENCH LANGUAGE TEST RESULTS[1.]

(A) ENGLISH LANGUAGE TESTS C.A.T.:	Early Immersion	Grade 7 Centre	Grade 7 Wing	English Control	French Control	F Ratio	df
(1) Vocabulary	34.27	30.44	34.09	30.97		7.24***	3,150
(2) Comprehension	33.53	31.61	35.18	32.17		3.16*	3,150
(3) Spelling	22.55	21.70	23.59	21.19		2.20	3,150

1. Test scores joined by a line differ significantly from one another.

* $p < .05$; ** $p. < 0.1$; *** $p. < .001$

TABLE 2 - Cont'd.-

(B) FRENCH LANGUAGE TESTS	Early Immersion	Grade 7 Centre	Grade 7 Wing	English Control	French Control	F Ratio	df
(4) Test de Rendement en Français	4.82	4.02	5.52	3.43	6.02	21.32***	4,179
(5) Test de Rendement en Mathématiques	5.60	5.94	4.74	5.10	5.25	4.77***	4,179
(6) Test de Lecture Cloze							
(i) Exact replacement	14.17	10.38	8.68	8.24	15.57	26.69***	4,169
(ii) Synonym	3.18	2.33	2.15	2.29	4.88	9.57***	4,169
(iii) Non-sense	2.25	3.36	2.79	3.41	.79	6.88***	4,169
(iv) Grammatical error	5.00	7.07	8.39	8.35	2.69	22.41***	4,169
(v) Omissions	2.06	2.16	3.48	3.93	.61	2.03	4,169
(7) Dictée:							
(i) Omissions	1.08	.73	.50	1.30	.04	1.14	4,161
(ii) Usage	.85	.46	.54	2.02	.31	11.50***	4,161
(iii) Grammaticale	4.64	6.38	7.23	9.48	3.07	10.89***	4,161
(iv) Accent	3.56	2.68	4.02	4.23	.46	3.73**	4,161
(v) Transfer	1.96	1.69	1.95	7.23	.23	20.49***	4,161
(vi) Comprehension	.99	.98	1.02	1.80	.01	3.78**	4,161
(8) Test d'Ecoute	10.77	10.15	9.95	Not given	14.08	3.12*	3,121
(9) Production Orale:							
(i) Elocution	3.53	2.83	2.96			3.63*	2.54
(ii) Prononciation	4.03	3.55	3.93			8.25***	2.54
(iii) Grammaire	3.38	2.76	3.00			5.64**	2.54
(iv) Vocabulaire	3.38	2.66	2.67			6.46**	2.54
(v) Idées	13.05	11.53	13.97			2.66▼	2.54

* p. < .05; ** p. < .01; *** p. < .001 ▼ p. = .07